



4-2002 #3
2100

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Atty. Docket 2613

MIHAELA VAN DER SCHAAR

US 020044

Serial No.: 10/076,374

Group Art Unit: 2631

Filed: FEBRUARY 15, 2002

Title: MEMORY-BANDWIDTH EFFICIENT FGS ENCODER

Commissioner for Patents
Washington, D.C. 20231

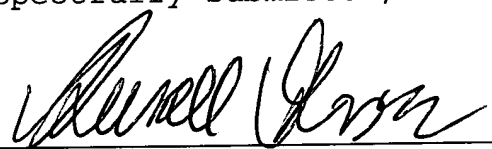
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LETTER TO OFFICIAL DRAFTSMAN

Sir:

Enclosed are (4) four sheets of formal drawings
for filing in the above-identified application.

Respectfully submitted,

By 
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being
deposited this date with the United States Postal Service as
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On March 27, 2002

By Elna Chapa

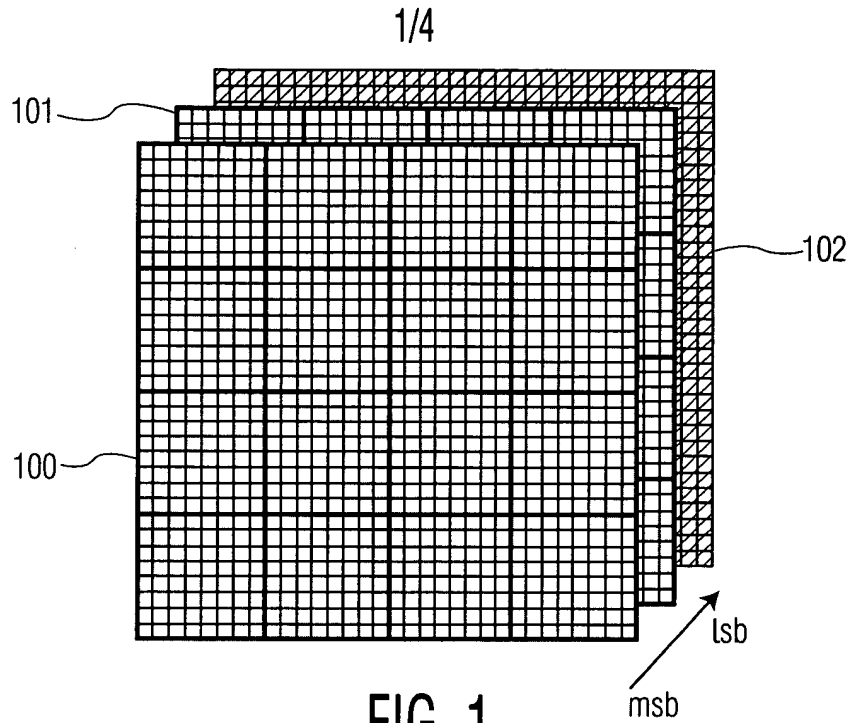


FIG. 1
(PRIOR ART)

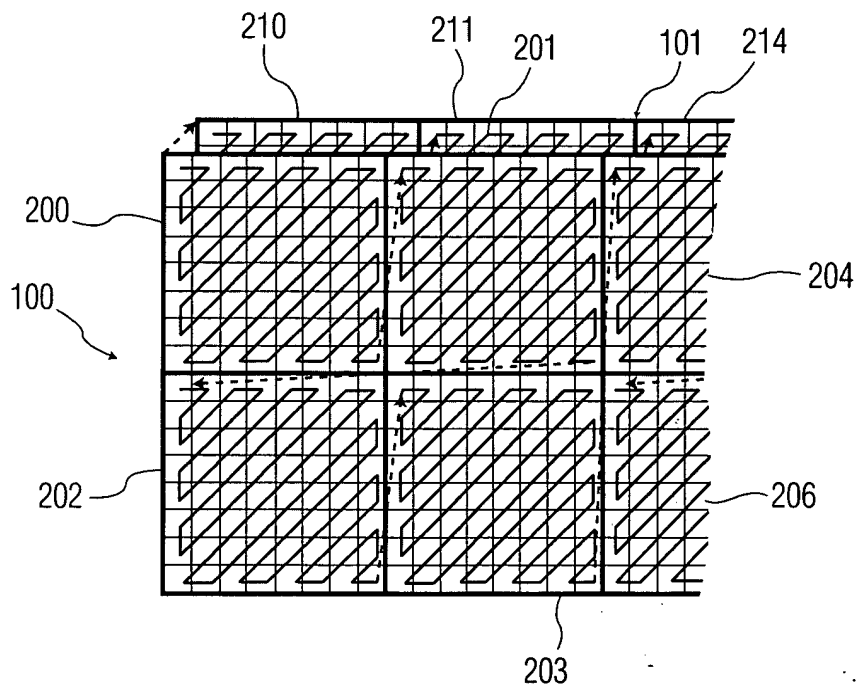


FIG. 2
(PRIOR ART)

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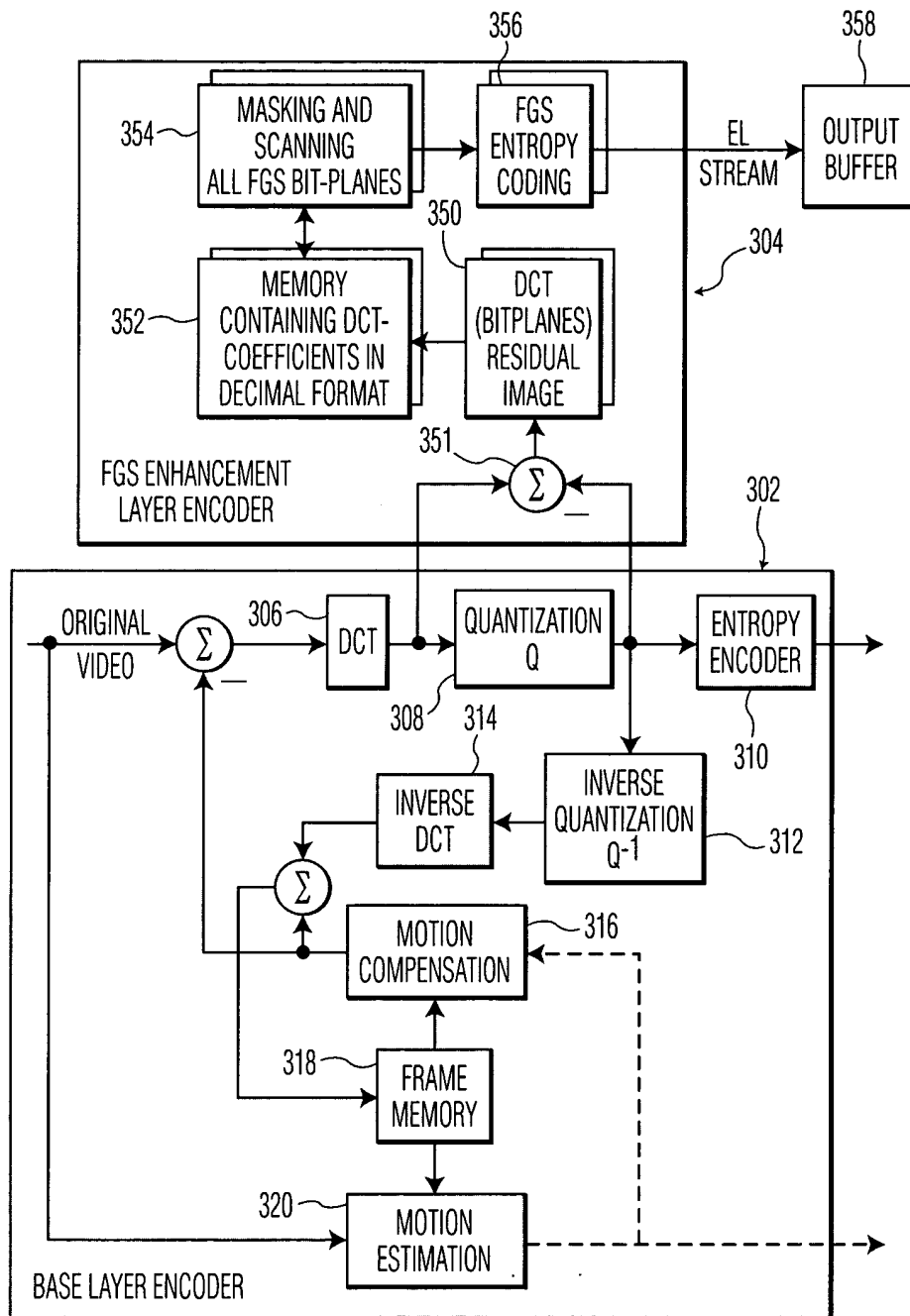


FIG. 3
(PRIOR ART)

The diagram illustrates a video encoder system (FIG. 500) consisting of two main components: a **BASE LAYER ENCODER** and an **FGS ENHANCEMENT LAYER ENCODER**.

Base Layer Encoder:

- ORIGINAL VIDEO** is input to a summation node (Σ).
- The output of the summation node is labeled **506** and is fed into the **DCT** block.
- The output of the **DCT** block is fed into the **QUANTIZATION Q** block.
- The output of the **QUANTIZATION Q** block is fed into the **ENTROPY ENCODER**.
- The output of the **ENTROPY ENCODER** is labeled **510**.
- The output of the **ENTROPY ENCODER** is fed into the **INVERSE QUANTIZATION Q⁻¹** block.
- The output of the **INVERSE QUANTIZATION Q⁻¹** block is labeled **512**.
- The output of the **INVERSE QUANTIZATION Q⁻¹** block is fed into the **INVERSE DCT** block.
- The output of the **INVERSE DCT** block is labeled **514**.
- The output of the **INVERSE DCT** block is fed into a summation node (Σ).
- The output of this summation node is fed back into the first summation node (Σ).
- The output of the first summation node is fed into the **MOTION COMPENSATION** block.
- The output of the **MOTION COMPENSATION** block is fed into the **FRAME MEMORY** block.
- The output of the **FRAME MEMORY** block is labeled **518**.
- The output of the **FRAME MEMORY** block is fed into the **MOTION ESTIMATION** block.
- The output of the **MOTION ESTIMATION** block is labeled **520**.
- The output of the **MOTION ESTIMATION** block is fed into the **MOTION COMPENSATION** block.
- The output of the **MOTION ESTIMATION** block is also fed into the **BASE LAYER ENCODER**.

FGS Enhancement Layer Encoder:

- The output of the **BASE LAYER ENCODER** is fed into a summation node (Σ).
- The output of this summation node is labeled **551** and is fed into the **DCT (BITPLANES) RESIDUAL IMAGE** block.
- The output of the **DCT (BITPLANES) RESIDUAL IMAGE** block is fed into the **FGS SCANNING AND ENTROPY CODING** block.
- The output of the **FGS SCANNING AND ENTROPY CODING** block is labeled **553**.
- The output of the **FGS SCANNING AND ENTROPY CODING** block is fed into the **EL STREAM** block.
- The output of the **EL STREAM** block is fed into the **OUTPUT BUFFER** block.
- The output of the **OUTPUT BUFFER** block is labeled **558**.

The overall system is labeled **500** and **FIG. 500**.

FIG. 5

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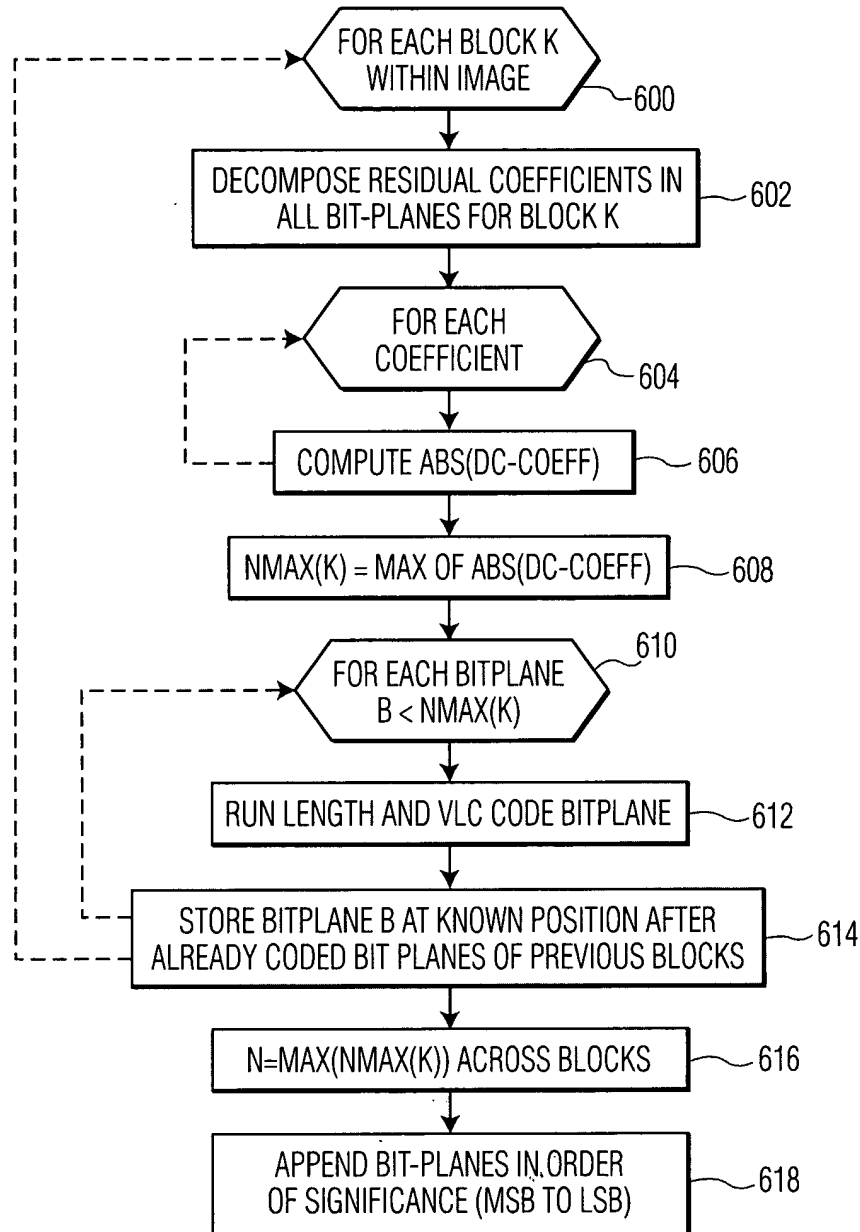


FIG. 6